

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

LISTING OF CLAIMS:

1. (Currently Amended) A circuit board comprising:

a first signal layer having a signal conductor and a contact pad in electrical communication with the signal conductor;

a second signal layer substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening, the opening substantially aligned with the contact pad, and the opening configured to minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad; and

a nonconductive layer disposed between the first signal layer and the second signal layer;

wherein the contact pad comprises a pad center axis and wherein the opening, defined by the conductive plane, comprises an opening center axis, the pad center axis substantially perpendicular to the first signal layer, the opening center axis substantially perpendicular to the second signal layer, and the pad center axis and the opening center axis oriented substantially parallel and defining an offset distance between the pad center axis and the opening center axis; and

wherein the opening defined by the conductive plane comprises an opening diameter and wherein the contact pad comprises a pad diameter, the opening diameter being at least equal to the contact pad diameter.

Claims 2 - 6 (Cancelled).

7. (Currently Amended) The circuit board of claim ~~[[6]]~~ 1 wherein the signal conductor comprises a centerline and wherein the pad center axis of the contact pad substantially intersects the centerline of the signal conductor.

8. (Currently Amended) The circuit board of claim ~~[[6]]~~ 1 wherein the signal conductor comprises a centerline and wherein the opening center axis of the opening defined by the conductive plane substantially intersects the centerline of the signal conductor.

9. (Currently Amended) The circuit board of claim ~~[[6]]~~ 1 wherein the signal conductor comprises a centerline, the pad center axis of the contact pad defines a first centerline offset relative to the centerline of the signal conductor, and the opening center axis of the opening defined by the conductive plane defines a second centerline offset relative to the centerline of the signal conductor.

Claim 10 (Cancelled).

11. (Original) The circuit board of claim 1 wherein the contact pad comprises a testing pad that allows attachment of a circuit board testing device to the circuit board.

12. (Original) The circuit board of claim 1 wherein the contact pad comprises a circuit board component connection pad that allows attachment of a circuit board component to the circuit board.

13. (Currently Amended) An electronic system comprising:

 a power supply having a voltage terminal and a ground terminal;

 an interconnect in electrical communication with the voltage terminal and the ground terminal of the power supply; and

 a circuit board having:

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a first signal layer having a signal conductor and a contact pad in electrical communication with the signal conductor,

a second signal layer substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening, the conductive plane in electrical communication with one of the voltage terminal and the ground terminal of the power supply through the interconnect, the opening substantially aligned with the contact pad, and the opening configured to minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad, and

a nonconductive layer disposed between the first signal layer and the second signal layer;

wherein the contact pad comprises a pad center axis and wherein the opening, defined by the conductive plane, comprises an opening center axis, the pad center axis substantially perpendicular to the first signal layer, the opening center axis substantially perpendicular to the second signal layer, and the pad center axis and the opening center axis oriented substantially parallel and defining an offset distance between the pad center axis and the opening center axis;

wherein the opening defined by the conductive plane comprises an opening diameter and wherein the contact pad comprises a pad diameter, the opening diameter being at least equal to the contact pad diameter.

Claims 14 - 18 (Cancelled).

19. (Currently Amended) The electronic system of claim ~~[[18]]~~ 13 wherein the signal conductor comprises a centerline and wherein the pad center axis of the contact pad substantially intersects the centerline of the signal conductor.

20. (Currently Amended) The electronic system of claim ~~[[18]]~~ 13 wherein the signal conductor comprises a centerline and wherein the opening center axis of

the opening defined by the conductive plane substantially intersects the centerline of the signal conductor.

21. (Currently Amended) The electronic system of claim [[18]] 13 wherein the signal conductor comprises a centerline, pad center axis of the contact pad defines a first centerline offset relative to the centerline of the signal conductor, and the opening center axis of the opening defined by the conductive plane defines a second centerline offset relative to the centerline of the signal conductor.

Claim 22 (Cancelled).

23. (Original) The electronic system of claim 13 wherein the contact pad comprises a testing pad that allows attachment of a circuit board testing device to the circuit board.

24. (Original) The electronic system of claim 13 wherein the contact pad comprises a circuit board component connection pad that allows attachment of a circuit board component to the circuit board.

Claims 25 - 27 (Cancelled).

28. (Currently Amended) A circuit board comprising:

- a first signal layer having a signal conductor means and a contact pad means in electrical communication with the signal conductor;

- a second signal layer substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening means for substantially normalizing an impedance of the signal conductor means and an impedance of the contact pad means, the opening means substantially aligned with the contact pad means, and the opening means minimizing a signal

reflection of a signal transmitted through the signal conductor means and across the contact pad means; and

a nonconductive layer disposed between the first signal layer and the second signal layer;

wherein the contact pad means comprises a pad center axis and wherein the opening means, defined by the conductive plane, comprises an opening center axis, the pad center axis substantially perpendicular to the first signal layer, the opening center axis substantially perpendicular to the second signal layer, and the pad center axis and the opening center axis oriented substantially parallel and defining an offset distance between the pad center axis and the opening center axis;

wherein the opening means defined by the conductive plane comprises an opening diameter and wherein the contact pad means comprises a pad diameter, the opening diameter being at least equal to the contact pad diameter.

Claim 29 (Cancelled).

30. (Currently Amended) The circuit board of claim ~~[[29]]~~ 28 wherein the signal conductor means comprises a centerline, the pad center axis of the contact pad means defines a first centerline offset relative to the centerline of the signal conductor means, and the opening center axis of the opening means defined by the conductive plane defines a second centerline offset relative to the centerline of the signal conductor means.

Claim 31 (Cancelled).

32. (Previously Presented) The circuit board of claim 1, wherein:

the opening defined by the conductive plane extends from a first face of the second signal layer facing the nonconductive layer to a second face of the

second signal layer, the second face of the second signal layer opposing the first face of the first signal layer; and

the nonconductive layer being disposed across the first face of the second signal layer such that the nonconductive layer covers the opening defined by the conductive plane.

33. (Previously Presented) The electronic system of claim 13, wherein:

the opening defined by the conductive plane extends from a first face of the second signal layer facing the nonconductive layer to a second face of the second signal layer, the second face of the second signal layer opposing the first face of the first signal layer; and

the nonconductive layer being disposed across the first face of the second signal layer such that the nonconductive layer covers the opening defined by the conductive plane.

34. (New) A circuit board comprising:

a first signal layer having a signal conductor and a contact pad in electrical communication with the signal conductor;

a second signal layer substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening, the opening substantially aligned with the contact pad, and the opening configured to minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad; and

a nonconductive layer disposed between the first signal layer and the second signal layer;

wherein the contact pad comprises a pad center axis and wherein the opening, defined by the conductive plane, comprises an opening center axis, the pad center axis substantially perpendicular to the first signal layer, the opening center axis substantially perpendicular to the second signal layer, and the pad center axis and the opening center axis oriented substantially parallel and

defining an offset distance between the pad center axis and the opening center axis;

wherein the signal conductor comprises a centerline, the pad center axis of the contact pad defines a first centerline offset relative to the centerline of the signal conductor, and the opening center axis of the opening defined by the conductive plane defines a second centerline offset relative to the centerline of the signal conductor.

35. (New) An electronic system comprising:

a power supply having a voltage terminal and a ground terminal;

an interconnect in electrical communication with the voltage terminal and the ground terminal of the power supply; and

a circuit board having:

a first signal layer having a signal conductor and a contact pad in electrical communication with the signal conductor,

a second signal layer substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening, the conductive plane in electrical communication with one of the voltage terminal and the ground terminal of the power supply through the interconnect, the opening substantially aligned with the contact pad, and the opening configured to minimize a signal reflection of a signal transmitted through the signal conductor and across the contact pad, and

a nonconductive layer disposed between the first signal layer and the second signal layer;

wherein the contact pad comprises a pad center axis and wherein the opening, defined by the conductive plane, comprises an opening center axis, the pad center axis substantially perpendicular to the first signal layer, the opening center axis substantially perpendicular to the second signal layer, and the pad center axis and the opening center axis

oriented substantially parallel and defining an offset distance between the pad center axis and the opening center axis;

wherein the signal conductor comprises a centerline, the pad center axis of the contact pad defines a first centerline offset relative to the centerline of the signal conductor, and the opening center axis of the opening defined by the conductive plane defines a second centerline offset relative to the centerline of the signal conductor.

36. (New) A circuit board comprising:

a first signal layer having a signal conductor means and a contact pad means in electrical communication with the signal conductor;

a second signal layer substantially parallel to the first signal layer, the second signal layer having a conductive plane defining an opening means for substantially normalizing an impedance of the signal conductor means and an impedance of the contact pad means, the opening means substantially aligned with the contact pad means, and the opening means minimizing a signal reflection of a signal transmitted through the signal conductor means and across the contact pad means; and

a nonconductive layer disposed between the first signal layer and the second signal layer;

wherein the contact pad means comprises a pad center axis and wherein the opening means, defined by the conductive plane, comprises an opening center axis, the pad center axis substantially perpendicular to the first signal layer, the opening center axis substantially perpendicular to the second signal layer, and the pad center axis and the opening center axis oriented substantially parallel and defining an offset distance between the pad center axis and the opening center axis;

wherein the signal conductor means comprises a centerline, the pad center axis of the contact pad means defines a first centerline offset relative to the centerline of the signal conductor means, and the opening center axis of the

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opening means defined by the conductive plane defines a second centerline
offset relative to the centerline of the signal conductor means